

REMARKS

In an Office Action mailed on June 3, 2005 (the "Office Action"), the Examiner: (1) rejected claims 9-11 and 21-22 under 35 U.S.C. § 102(e) as anticipated by U.S. Pat. No. 6,329,708 to Komiyama ("Komiyama"); (2) rejected claims 1-4, 12, 16-18, and 23 under 35 U.S.C. § 103(a) as being unpatentable over Komiyama (cited as U.S. Pat. No. 6,300,679 but from the discussion clearly referring to U.S. Pat. No. 6,329,708) in view of U.S. Pat. No. 6,588,095 to Pan ("Pan"); (3) rejected claims 5-8, 13-15, 20 and 24 under 35 U.S.C. § 103(a) as being unpatentable over Komiyama (cited as U.S. Pat. No. 6,300,679 but from the discussion clearly referring to U.S. Pat. No. 6,329,708) in view of Pan as applied to claim 1, and further in view of U.S. Pat. App. Pub. No. 2003/0016710 to Komoto ("Komoto"); (4) rejected claim 19 under 35 U.S.C. § 103(a) as being unpatentable over Komiyama (cited as U.S. Pat. No. 6,300,679 but from the discussion clearly referring to U.S. Pat. No. 6,329,708) in view of Pan as applied to claim 1, and further in view of U.S. Pat. No. 6,803,651 to Chiang ("Chiang"); and (5) rejected claim 25 (see the Office Action Summary stating that claim 1-25 are rejected), but without providing any basis, explanation or rationale for such rejection.

By this response, Applicants respectfully seek allowance of pending claims 1-25 for at least the reasons given below:

Preliminary Explanation of One of the Bases of this Response

In the Examiner's discussion of the rejections summarized in items (2)-(4) above, Komiyama was identified as U.S. Pat. No. 6,300,679, which actually is a patent issued to Mukerji et al. With reference to claim 1, however, the Examiner alleged that "figure 8" of "Komiyama" discloses:

a first CSP (“semiconductor chip” 701b); a second CSP (“semiconductor chip” 701a) disposed above the first CSP (“semiconductor chip” 701b) in stacked disposition; a first form standard (“insulating layer” 709b) disposed, in substantial part, above the first CSP (“semiconductor chip” 701b); flex circuitry (comprising elements 713b, 713b) connecting the first and second CSPs (semiconductor chips 701b, 701a) and positioned to be, in part, beneath the first CSP (“semiconductor chip” 701b) and, in part, above the first form standard (“insulating layer” 709b) and beneath the second CSP (“semiconductor chip” 701a).

Figure 8 of U.S. Pat. No. 6,300,679 discloses no structures or arrangements corresponding to the Examiner’s allegation, whereas Figure 8 of U.S. Pat. No. 6,329,708, i.e., Komiyama, does in fact have component 709b identified as an “insulating layer” and components 701a and 701b identified as “semiconductor chips.” Elsewhere in the Office Action, e.g., the first paragraph of each of sections 5 and 6, the Examiner’s reference to and reliance on “Komiyama et al (U.S. 6,300,679)” is made “as applied to claim 1 above.” Accordingly, Applicants reasonably have concluded that every reference by the Examiner in the Office Action to “Komiyama” is indeed a reference to U.S. Pat. No. 6,329,708, i.e., Komiyama, and not to U.S. Pat. No. 6,300,679 to Mukerji et al.

(1) Rejection of Claims 9-11 and 21-22 Under 35 U.S.C. § 102(e)

The Examiner rejected claims 9-11 and 21-22 under 35 U.S.C. § 102(e) as anticipated by Komiyama. Applicants respectfully traverse the rejection of claims 9-11 and 21-22 at least for the following reasons.

Independent claim 9 recites “a first form standard” and “a second form standard,” and independent claim 21 recites “a form standard.” A claim term is generally given the ordinary and customary meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention. E.g., Phillips v. AWH Corp., 415 F.3d 1303, 1314 (Fed. Cir. 2005) (en banc). In construing a claim term, the “person of ordinary skill in the art is deemed to read the claim term ... in the context of the entire patent, including the specification.” Id. Thus, the specification “the primary basis for construing the claims.” Id. at 1315. During prosecution, the Office gives claims their broadest reasonable construction “in light of the specification as it would be interpreted by one of ordinary skill in the art.” Id. at 1316; e.g., In re Hyatt, 211 F.3d 1367, 1372 (Fed. Cir. 2000) (“[D]uring examination proceedings, claims are given their broadest reasonable interpretation consistent with the specification.”); In re Royka, 490 F.2d 981, 984 (CCPA 1974) (“Claims are not to be read in a vacuum and while it is true they are to be given the broadest reasonable interpretation during prosecution, their terms still have to be given the meaning called for by the specification of which they form a part.”).

The written description of this application provides the required context for construction of the term “form standard” as such term would be understood by a person of ordinary skill in the art in light of the entire patent application. Among other descriptions, the following nonexhaustive and nonlimiting context is provided:

The form standard provides a physical form that allows many of
the varying package sizes found in the broad family of CSP

packages to be used to advantage while employing a standard connective flex circuitry design. In a preferred embodiment, the form standard will be devised of heat transference material, a metal, for example, such as copper would be preferred, to improve thermal performance.

Paragraph [0012].

In constructing modules in accordance with some preferred modes of the invention, when attaching the form standard to the flex circuitry, metallurgical bonds are created between flex circuitry and the form standard.

Paragraph [0013].

Form standard 34 is, in a preferred embodiment, devised from copper ... [but] may also be devised from nickel plated copper in preferred embodiments. . . . [The form standard] need not be thermally enhancing although such attributes are preferable.

Paragraph [0024]. And in some embodiments, an adhesive can be used between a form standard and a CSP. Paragraph [0026]. From the foregoing context, a person of ordinary skill in the art in light of the entire specification would understand that the term “form standard” comprehends and includes both metal and nonmetal components.

In applying Komiyama to reject claims 9-11 and 21-22, the Examiner characterized “insulating layer” 709b and 709a shown in Fig. 8 of Komiyama as “a first form standard” and “a second form standard” respectively. This conclusory and unfounded assertion is the only basis offered by the Examiner for the conclusion that Komiyama discloses a “form standard.”

Absolutely no explanation is provided that would support the conclusion that a person of ordinary skill in the art, in light of the entire specification of this application, would understand an “insulating layer” to be within the meaning of the term “form standard.” In fact, Komiyama itself discloses that an “insulating layer” as disclosed in Komiyama cannot be a “form standard.”

Except for Figure 8, Komiyama does not disclose specifics about insulating layers 709a and 709b. Komiyama, however, does discuss “insulating layer” components 109, 113, 509a, 513a, 909, and 913 illustrated variously in Figures 2-6 and 10 of Komiyama. For example:

The tape 108 includes insulating layers 109, 113 with the conductive layers which are sandwiched between the insulating layers 109, 113. For example, the conductive layers 110 are made of copper (Cu). The insulating layer 109 is made of polyimide or glass epoxy, while the insulating layer 113 is made of solder resist.

Komiyama, col. 3, ll. 7-12.

The tape 508a includes insulating layers 509a, 513a and the conductive layers 510a which are sandwiched between the insulating layers 509a, 513a. For example, the conductive layer 510a is made of copper (Cu). The insulating layer 509a is made of polyimide or glass epoxy, while the insulating layer 513a is made of solder resist.

Komiyama, col. 4, ll. 51-57.

The tape 908 includes insulating layers 909, 913 and conductive layers 910 which are sandwiched between the insulating layers 909, 913. The conductive layer 910 is made of copper (Cu), for

example. The insulating layer 909 is made of polyimide or glass epoxy, while the insulating layer 913 is made of solder resist.

Komiyama, col. 6, ll. 30-35.

Komiyama itself compels the conclusion that insulating layers 709a and 709b integral with, and one of the two insulating layers of, tapes 708a and 709b respectively. Moreover, the disclosure of Komiyama further clearly compels the conclusion that insulating layers 709a and 709b perform an insulating function, which is completely different from the function of the form standards of the present specification that can be made out of either metal (i.e., conductive and noninsulating) or nonmetal materials. A person of ordinary skill in the art, in light of the entire specification of this application, would clearly not understand an “insulating layer” to be within the meaning of the term “form standard.” Thus, Komiyama does not disclose a form standard

Because Komiyama does not disclose every limitation of independent claim 9, claim 9 is not anticipated by Komiyama and no basis has been provided for a rejection under 35 U.S.C. § 102(b). E.g., Verdegaal Bros. v. Union Oil Co., 814 F.2d 628, 631 (Fed. Cir. 1987). Each of claims 10 and 11 depends directly or indirectly from claim 9 and therefore incorporates by reference all the limitations of claim 9. 35 U.S.C. § 112, ¶ 4. Because Komiyama does not disclose every limitation of claim 9, Komiyama necessarily does not disclose every limitation of claims 10 and 11. Accordingly, claims 10 and 11 are not anticipated by Komiyama, and no basis has been provided for rejection under 35 U.S.C. § 102(b). E.g., Verdegaal Bros., 814 F.2d at 631.

Because Komiyama does not disclose every limitation of independent claim 21, claim 21 is not anticipated by Komiyama and no basis has been provided for a rejection under 35 U.S.C. § 102(b). E.g., id. Claim 22 depends from claim 21 and therefore incorporates by reference all the

limitations of claim 21. 35 U.S.C. § 112, ¶ 4. Because Komiyama does not disclose every limitation of claim 21, Komiyama necessarily does not disclose every limitation of claim 22. Accordingly, claim 22 is not anticipated by Komiyama, and no basis has been provided for rejection under 35 U.S.C. § 102(b). *E.g., Verdegaaal Bros.*, 814 F.2d at 631.

For the foregoing reasons, Applicants respectfully request that the rejection of claims 9-11 and 21-22 under 35 U.S.C. § 102(e) as anticipated by Komiyama be withdrawn.

(2) Rejection of Claims 1-4, 12, 16-18, and 23 Under 35 U.S.C. § 103(a)

With respect to the rejection of claims 1-4, 12, 16-18, and 23 under 35 U.S.C. § 103(a) as being unpatentable over Komiyama in view of Pan, Applicants respectfully submit that the rejection be withdrawn because the Office Action does not set forth a *prima facie* case of obviousness.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. MPEP § 2143. Second, there must be a reasonable expectation of success. *Id.* Finally, the prior art references must teach or suggest all the claim limitations. MPEP § 2143; *e.g., In re Royka*, 490 F.2d 981, 985 (CCPA 1974) (holding that establishing a *prima facie* obviousness requires that all the claim limitations must be taught or suggested by the prior art).

As noted above, independent claims 9 and 21 each recite a “form standard,” as do each of independent claims 1 and 18. For the reasons noted above, Komiyama does not teach or suggest a form standard. Similarly, Pan does not teach or suggest a form standard.

In the Office Action, the Examiner alleges that Pan “discloses in figure 2 ... form standard (‘thin film’ 19).” This conclusory and unfounded assertion is the only basis offered by the Examiner for the conclusion that Pan discloses a “form standard.” Absolutely no explanation is provided that would support the conclusion that a person of ordinary skill in the art, in light of the entire specification of this application, would understand a “thin film” to be within the meaning of the term “form standard.” In fact, Pan itself discloses that a “thin film” as disclosed in Pan cannot be a “form standard.”

“Thin film” 19 of Pan is “a thin insulating film of uniform thickness” formed by electrophoretic plating. E.g., Pan, col. 2, ll. 33-34, 45-46; col. 3, ll. 37-39, 55-57, 65-67; col. 4, ll. 47-49. Thus, it is clear that the “thin film” 19 of Pan is a component *applied to a physical form* such as bonding beam 16 or bonding beam 53 by plating. E.g., Pan, col. 3, ll. 33-39, 49-57; col. 4, ll. 46-49. In contrast, the “form standard” of the present invention “provides a physical form.” Paragraph [0012]. Moreover, the “thin film” 19 of Pan of insulating, rendering its function completely different from the function provided by the “form standard” of the present invention.

Because of the significant characteristics of the “thin film” 19 of Pan, a person of ordinary skill in the art, in light of the entire specification of this application, would not understand such “thin film” to be within the meaning of the term “form standard.” Thus, neither Komiyama nor Pan discloses a “form standard” within the meaning of the present disclosure.

Because Komiyama and Pan combined fail to teach or suggest all of the claim limitations of independent claim 1, claim 1 is not unpatentable over Komiyama in view of Pan. MPEP § 2143; e.g., In re Royka, 490 F.2d 981, 985 (CCPA 1974). Each of claims 2-4 depends from claim 1 and therefore incorporates by reference all the limitations of claim 1. 35 U.S.C. §

112, ¶ 4. Because Komiyama and Pan combined fail to teach or suggest all of the claim limitations of independent claim 1, Komiyama and Pan combined necessarily do not disclose every limitation of claims 2-4. Accordingly, claims 2-4 are not unpatentable over Komiyama in view of Pan, and no basis has been provided for rejection under 35 U.S.C. § 103(a). *E.g., In re Royka*, 490 F.2d 981, 985 (CCPA 1974).

In addition, Komiyama and Pan combined fail to teach or suggest all of the claim limitations of independent claim 9. Each of claims 12, 16, and 17 depends directly or indirectly from claim 9 and therefore incorporates by reference all the limitations of claim 9. 35 U.S.C. § 112, ¶ 4. Because Komiyama and Pan combined fail to teach or suggest all of the claim limitations of independent claim 9, Komiyama and Pan combined necessarily do not disclose every limitation of claims 12 and 16-18. Accordingly, claims 12, 16, and 17 are not unpatentable over Komiyama in view of Pan, and no basis has been provided for rejection under 35 U.S.C. § 103(a). *E.g., In re Royka*, 490 F.2d 981, 985 (CCPA 1974).

Because Komiyama and Pan combined fail to teach or suggest all of the claim limitations of independent claim 18, claim 18 is not unpatentable over Komiyama in view of Pan. *MPEP* § 2143; *e.g., In re Royka*, 490 F.2d 981, 985 (CCPA 1974).

Komiyama and Pan combined fail to teach or suggest all of the claim limitations of independent claim 21. Claim 23 depends from claim 21 and therefore incorporates by reference all the limitations of claim 21. 35 U.S.C. § 112, ¶ 4. Because Komiyama and Pan combined fail to teach or suggest all of the claim limitations of independent claim 21, Komiyama and Pan combined necessarily do not disclose every limitation of claim 23. Accordingly, claim 23 is not unpatentable over Komiyama in view of Pan, and no basis has been provided for rejection under 35 U.S.C. § 103(a). *E.g., In re Royka*, 490 F.2d 981, 985 (CCPA 1974).

In addition, the Examiner has failed to establish any suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings, or that there would be a reasonable expectation of success from such combination.

For the foregoing reasons, Applicants respectfully request that the rejection of claims 1-4, 12, 16-18, and 23 under 35 U.S.C. § 103(a) as being unpatentable over Komiyama in view of Pan be withdrawn.

(3) Rejection of Claims 5-8, 13-15, 20, and 24 Under 35 U.S.C. § 103(a)

With respect to the rejection of claims 5-8, 13-15, 20, and 24 under 35 U.S.C. § 103(a) as being unpatentable over Komiyama in view of Pan as applied to claim 1, and further in view of Komoto, Applicants respectfully submit that the rejection be withdrawn because the Office Action does not set forth a *prima facie* case of obviousness.

In the Office Action, the Examiner has not asserted that Komoto discloses a form standard. Therefore, based on the discussion above the Examiner has failed to establish that the combination of Komiyama in view of Pan and further in view of Komoto teaches or suggests all of the claim limitations of independent claims 1, 9, 18, and 21. Each of claims 5-8, 13-15, 20, and 24 depends directly or indirectly from one of independent claims 1, 9, 18, and 21, and thus incorporates by reference all the limitations of such independent claim. 35 U.S.C. § 112, ¶ 4. Because Komiyama, Pan, and Komoto combined fail to teach or suggest all of the claim limitations of independent claims 1, 9, 18, and 21, Komiyama, Pan, and Komoto combined necessarily do not disclose every limitation of dependent claims 5-8, 13-15, 20, and 24. Accordingly, dependent claims 5-8, 13-15, 20, and 24 are not unpatentable over Komiyama in

view of Pan and further in view of Komoto, and no basis has been provided for rejection under 35 U.S.C. § 103(a). E.g., In re Royka, 490 F.2d 981, 985 (CCPA 1974).

In addition, the Examiner has failed to establish any suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings, or that there would be a reasonable expectation of success from such combination.

For the foregoing reasons, Applicants respectfully request that the rejection of dependent claims 5-8, 13-15, 20, and 24 under 35 U.S.C. § 103(a) as being unpatentable over Komiyama in view of Pan and further in view of Komoto be withdrawn.

(4) Rejection of Claim 19 Under 35 U.S.C. § 103(a)

With respect to the rejection of claim 19 under 35 U.S.C. § 103(a) as being unpatentable over Komiyama in view of Pan as applied to claim 1, and further in view of Chiang, Applicants respectfully submit that the rejection be withdrawn because the Office Action does not set forth a *prima facie* case of obviousness.

In the Office Action, the Examiner has not asserted that Chiang discloses a form standard. Therefore, based on the discussion above the Examiner has failed to establish that the combination of Komiyama in view of Pan and further in view of Chiang teaches or suggests all of the claim limitations of independent claim 18. Claim 19 depends from independent claim 18, and thus incorporates by reference all the limitations of such independent claim. 35 U.S.C. § 112, ¶ 4. Because Komiyama, Pan, and Chiang combined fail to teach or suggest all of the claim limitations of independent claim 18, Komiyama, Pan, and Chiang combined necessarily do not disclose every limitation of dependent claim 19. Accordingly, dependent claim 19 is not

unpatentable over Komiyama in view of Pan and further in view of Chiang, and no basis has been provided for rejection under 35 U.S.C. § 103(a). E.g., In re Royka, 490 F.2d 981, 985 (CCPA 1974).

In addition, the Examiner has failed to establish any suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings, or that there would be a reasonable expectation of success from such combination.

For the foregoing reasons, Applicants respectfully request that the rejection of dependent claim 19 under 35 U.S.C. § 103(a) as being unpatentable over Komiyama in view of Pan and further in view of Chiang be withdrawn.

(5) Rejection of Claim 25 Without Basis, Explanation or Rationale

Because the Office Action Summary for the Office Action states that claim 1-25 are rejected, the Examiner apparently also rejected claim 25. The Examiner, however, did not provide any basis, explanation or rationale for rejection of claim 25. Based on the discussion above in section 2 of this response, however, a rejection of claim 25 cannot be maintained based on any of the references relied on by the Examiner for rejection of any of claims 1-24.

Claim 25 depends from independent claim 21, and thus incorporates by reference all the limitations of such independent claim. 35 U.S.C. § 112, ¶ 4. Because Komiyama, Pan, Komoto, and Chiang combined fail to teach or suggest all of the claim limitations of independent claim 21, Komiyama, Pan, and Komoto, and Chiang combined necessarily do not disclose every limitation of dependent claim 25. Accordingly, dependent claim 25 is not unpatentable over Komiyama in view of Pan and further in view of Komoto and Chiang, and no basis has been

provided for rejection under 35 U.S.C. § 103(a). E.g., In re Royka, 490 F.2d 981, 985 (CCPA 1974).

CONCLUSION

The Office Action contains a number of statements potentially reflecting characterizations of various claims, supporting descriptions, and/or patent or patent application references. Regardless of whether any such statements are addressed in this response, Applicant declines to automatically subscribe to any statement or characterization in the Office Action. Although the Examiner's rejection of claims 1-25 has been completely traversed as set forth above without reference to many of such statements, Applicants hereby expressly reserve the right to dispute such statements later.

In view of the reasons given above, Applicant respectfully requests the reconsideration of the pending application, withdrawal of all of the claim rejections, and the timely allowance of the pending claims 1-25.

The Commissioner is hereby authorized to charge any extension or other fees deemed to be due or to credit any overpayment to Deposit Account No. 50-3434, upon which the undersigned is authorized to sign.

Respectfully submitted,

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